

WHAT IS CLAIMED IS:

1. A method for performing image-guided spinal surgery on a patient, comprising:
providing a surgical navigation reference device;
mounting the reference device to bone at a location remote from the patient's spinal
5 column and in a substantially fixed position relative thereto;
accessing a portion of the spinal column from an anterior direction; and
performing an image-guided surgical procedure on the spinal column using an anterior
surgical approach.
- 10 2. The method of claim 1, wherein the mounting comprises anchoring the reference
device to a portion of the patient's pelvic bone.
3. The method of claim 2, wherein the portion of the patient's pelvic bone
comprises the iliac region of the pelvic bone.
- 15 4. The method of claim 3, wherein the portion of the patient's pelvic bone
comprises the iliac crest.
5. The method of claim 4, wherein the portion of the pelvic bone is an anterior
20 region of the iliac crest.
6. The method of claim 5, wherein the portion of the patient's pelvic bone
comprises an anterior-superior region of the iliac crest.

7. The method of claim 1, further comprising providing a bone anchor; and
wherein the mounting comprises anchoring the bone anchor to the bone and coupling
the reference device to the bone anchor; and
wherein the accessing occurs subsequent to the anchoring.

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8. The method of claim 7, wherein the anchoring comprises anchoring the bone
anchor to a portion of the patient's pelvic bone.

9. The method of claim 8, wherein the portion of the patient's pelvic bone
10 comprises an anterior region of the iliac crest.

10. The method of claim 7, wherein the anchoring comprises percutaneously
inserting the bone anchor into the patient.

11. The method of claim 10, wherein the percutaneously inserting comprises:
15 providing a cannula having a proximal end and a distal end;
providing a trocar having a distal end portion;
positioning the trocar within the cannula with the distal end portion of the trocar
extending beyond the distal end of the cannula;
20 percutaneously introducing the cannula into the patient;
removing the trocar from the cannula; and
inserting the bone anchor through the cannula and into engagement with the bone.

12. The method of claim 1, wherein the accessing comprises forming a surgical incision remote from the mounting location; and

wherein the performing of the image-guided surgical procedure is accomplished through the surgical incision.

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13. The method of claim 12, wherein the surgical incision is formed subsequent to the mounting.

14. The method of claim 1, wherein the performing of the image-guided surgical procedure is accomplished percutaneously.

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15. The method of claim 1, wherein the image-guided surgical procedure comprises an artificial disc replacement procedure.

16. The method of claim 15, wherein the artificial disc replacement procedure is performed along the lumbar region of the spinal column.

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17. The method of claim 1, wherein the performing of the image-guided surgical procedure comprises:

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providing a spinal implant;

removing a portion of a natural intervertebral disc to form an intervertebral opening;

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inserting the spinal implant into the intervertebral opening using an anterior surgical

approach.

18. The method of claim 17, wherein the spinal implant comprises an artificial intervertebral disc.

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19. A method for performing image-guided spinal surgery on a patient, comprising:
providing a surgical navigation reference device and a spinal implant;
mounting the reference device to bone at a location remote from the patient's spinal column and in a substantially fixed position relative thereto;
10 accessing a portion of the spinal column from an anterior direction; and
performing an image-guided surgical procedure on the spinal column using an anterior surgical approach, including removing a portion of a natural intervertebral disc to form an intervertebral opening and inserting the spinal implant into the intervertebral opening.

15 20. The method of claim 19, wherein the mounting comprises anchoring the reference device to a portion of the patient's pelvic bone.

21. The method of claim 20, wherein the portion of the patient's pelvic bone comprises the iliac region of the pelvic bone.

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22. The method of claim 21, wherein the portion of the patient's pelvic bone comprises the iliac crest.

23. The method of claim 22, wherein the portion of the patient's pelvic bone comprises an anterior region of the iliac crest.

24. The method of claim 19, further comprising providing a bone anchor; and
5 wherein the mounting comprises anchoring the bone anchor to the bone and coupling the reference device to the bone anchor; and
wherein the accessing occurs subsequent to the anchoring.

25. The method of claim 24, wherein the anchoring comprises percutaneously
10 inserting the bone anchor into the patient.

26. The method of claim 19, wherein the accessing comprises forming a surgical incision remote from the mounting location; and
wherein the performing of the image-guided surgical procedure is accomplished
15 through the surgical incision.

27. The method of claim 26, wherein the surgical incision is formed subsequent to the mounting.

20 28. The method of claim 19, wherein the image-guided surgical procedure is performed along the lumbar region of the spinal column.

29. The method of claim 19, wherein the spinal implant comprises an artificial

intervertebral disc.

30. A method for performing image-guided spinal surgery on a patient, comprising:
providing a surgical navigation reference device, a bone anchor, and a spinal implant;
5 anchoring the bone anchor to an anterior portion of the iliac region of the patient's
pelvic bone;

coupling the reference device to the bone anchor to mount the reference device in a
substantially fixed position relative to the spinal column;

forming a surgical incision adjacent the lumbar region of the spinal column from an
10 anterior direction; and

performing an image-guided surgical procedure on the lumbar region of the spinal
column through the surgical incision using an anterior surgical approach, the image-guided
surgical procedure including removing a portion of a natural intervertebral disc to form an
intervertebral opening and inserting the spinal implant into the intervertebral opening.

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31. The method of claim 30, wherein the anterior portion of the iliac region of the
patient's pelvic bone comprises the iliac crest.

32. The method of claim 30, wherein the anchoring comprises percutaneously
20 inserting the bone anchor into the patient.

33. The method of claim 30, wherein the forming of the surgical incision occurs
subsequent to the anchoring of the bone anchor.

34. The method of claim 30, wherein the performing of the image-guided surgical procedure is accomplished percutaneously.

35. The method of claim 30, wherein the spinal implant comprises an artificial
5 intervertebral disc.